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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OLIFF & BERRIDGE
PO BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

PRENTY, MARK V

ART UNIT	PAPER NUMBER
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2822

DATE MAILED: 12/14/2001

18

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
09/077,207

Applicant(s)
INOUE et al.

Examiner
Prenty

Art Unit
2822



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Nov 30, 2001

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 25-56 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☒ Claim(s) 47-56 is/are allowed.

6) ☒ Claim(s) 25-46 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

This Office Action is in response to the RCE filed November 30, 2001.

The only patentable subject matter in this application, if any, is that recited in claims 47-56.

Claims 25, 27-43, 45 and 46 are rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, the specification does not describe a gate electrode comprising an extension extending outwardly above the channel region, as recited in independent claim 25. Rather, the specification describes a gate electrode comprising extensions extending outwardly above the source-drain regions. See the Figure 2 disclosure, for example, and note that gate 15 comprises extensions 152 extending outwardly above source/drain regions 12, not above channel region 17. Claims 27-43 depend on independent claim 25 and are thus similarly rejected. Claim 27, as it depends on independent claim 25, is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions and further comprising extensions extending outwardly from both ends of the gate electrode. Claim 27, as it depends on independent claim 26, is further rejected because the specification does not describe a transistor comprising a channel region with an outwardly extending extension and a gate electrode comprising extensions extending outwardly from both ends of the gate electrode. Claim 28, as it depends on independent claim 25, is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions and further comprising an extension extending outwardly from at least one

end of the gate electrode. Claim 28, as it depend on independent claim 26, is further rejected because the specification does not describe a transistor comprising a channel region with an outwardly extending extension and a gate electrode comprising an extension extending outwardly from at least one end of the gate electrode. Claim 29, as it depends on independent claim 25, is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the gate wiring layer is connected to the gate electrode extensions extending outwardly above the source-drain regions by a plurality of contact holes. Claim 32, as it depends on independent claim 25, is further rejected because the specification does not describe a transistor comprising a gate electrode with extensions extending outwardly above the source-drain regions and a channel region with an outwardly extending extension. Claim 37, as it depends on independent claim 25, is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the extensions extend in a direction substantially perpendicular to the (channel's) longitudinal direction. Claim 39, as it depends on independent claim 25, is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the extensions extend in a direction substantially perpendicular to the (channel's) longitudinal direction. Claim 43, as it depends on independent claim 25 is further rejected because the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the extensions extend in a direction substantially perpendicular to the (channel's) longitudinal direction. With respect to claim 45, first, the specification does not

describe a gate electrode comprising an extension extending outwardly above the channel region. Rather, the specification describes a gate electrode comprising extensions extending outwardly above the source-drain regions. See the Figure 2 disclosure, for example, and note that gate 15 comprises extensions 152 extending outwardly above source/drain regions 12, not above channel region 17. Furthermore, the specification apparently doesn't describe a transistor comprising claim 45's two extensions in any event. With respect to dependent claim 46, the specification apparently doesn't describe a transistor comprising claim 46's two extensions.

Claims 37, 39 and 43-46 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 37, whether depending on independent claim 25 or independent claim 26, is unclear in reciting "a longitudinal direction." Even assuming that "a longitudinal direction" is the channel length direction, claim 37, as it depends on independent claim 25, is incorrect because the gate extensions extending outwardly over the source-drain regions are parallel to the channel length direction. Claim 39, whether depending on independent claim 25 or independent claim 26, is unclear in reciting "a longitudinal direction." Even assuming that "a longitudinal direction" is the channel length direction, claim 39, as it depends on independent claim 25, is incorrect because the gate extensions extending outwardly over the source-drain regions are parallel to the channel length direction. Claim 43, whether depending on independent claim 25 or independent claim 26, is unclear in reciting "a longitudinal direction." Even assuming that "a longitudinal direction" is the channel length direction, claim 43, as it depends on independent claim 25, is incorrect because the gate extensions extending outwardly over the

source-drain regions are parallel to the channel length direction. Independent claim 44 is indefinite. Specifically, claim 44 is unclear in reciting "comprising a [sic] extension extending outwardly from a part of at least one of the gate wiring layer and the source-drain wiring layer, the part having two contact holes with which another contact hole is aligned." Such should instead apparently read "wherein at least one of the source-drain region and the gate electrode comprises an extension over which three aligned contact holes are formed." See Fig. 5 and the specification at page 16, lines 6-28. Claims 45-46 depend on independent claim 44 and are thus similarly indefinite.

Claims 25, 27, 28, 30, 31 and 37, at least insofar as understood, are rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Mistry et al. (United States Patent 5,821,575 already of record). See Mistry et al's Figure 1C, for example, and note the gate electrode.

Claim 44, at least insofar as understood, is rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Koyama et al. (United States Patent 5,623,155 already of record). See Koyama et al's Figure 2, for example, and note the source-drain wiring layers 3-5.

Claims 26, 28, 30, 31 and 37, at least insofar as understood, are rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Kerber et al. (United States Patent 5,623,155 already of record). See the entire patent, particularly Fig. 1. Note channel region 1, which includes an extension, gate electrode 4 and gate extension 6.

Claims 47-56 are apparently allowable over the prior art of record. There is nothing else patentable in this application.

The applicant's argument with respect to the maintained rejection of independent claim 25 under 35 USC 112, first paragraph, is wrong (as evidenced by its argument with respect to dependent claim 27 at that). Specifically, Figure 2's gate electrode 15's extensions 152 extend outwardly above the source-drain regions 12, not above channel region 17 (i.e., gate electrode 15 by definition extends above channel region 17, while gate electrode 15's extensions 152 extend over source-drain regions 12). Indeed, the applicant argues precisely that in its argument with respect to dependent claim 27 (i.e., "Further, Figure 2 shows the gate electrode having extensions extending outwardly above the source-drain region 12").

The applicant's argument with respect to the maintained rejection of dependent claim 27, as it depends on independent claim 25, under 35 USC 112, first paragraph, is wrong. First, the applicant fails to squarely address the rejection. In any event, although Figure 1 shows an embodiment wherein the transistor's gate electrode 15 has extensions 151 extending outwardly from both ends of the gate electrode and Figure 2 shows another embodiment wherein the transistor's gate electrode 15 has extensions 152 extending outwardly above source-drain regions 12, the specification, including the Figures 1-2 disclosure, does not describe a transistor comprising a gate electrode with extensions extending outwardly above the source-drain regions and extensions extending outwardly from both ends of the gate electrode.

The applicant's argument with respect to the maintained rejection of dependent claim 27, as it depends on independent claim 26, under 35 USC 112, first paragraph, is wrong. First, the applicant fails to squarely address the rejection. In any event, although Figure 1 shows an embodiment wherein the transistor's gate electrode 15 has extensions 151 extending outwardly from both ends of the gate electrode and

Figure 3 shows an embodiment wherein the transistor's channel region 17 has extensions 171, the specification, including the Figures 1 and 3 disclosure, does not describe a transistor comprising a channel region with an outwardly extending extension and a gate electrode with extensions extending outwardly from both ends of the gate electrode.

The applicant failed to present arguments with respect to the maintained rejection of claim 28 under 35 USC 112, first paragraph.

The applicant's argument with respect to the maintained rejection of claim 29 under 35 USC 112, first paragraph, is wrong. Contrary to the applicant's argument, the rejection does not assert "that this specification does not describe the gate wiring layer connected to the gate electrode extensions extending outwardly above the source-drain region by a plurality of contact holes." Rather, the rejection asserts "the specification does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the gate wiring layer is connected to the gate electrode extensions extending outwardly above the source-drain regions by a plurality of contact holes." The specification, including the Figure 5 disclosure, does not describe a gate electrode comprising extensions extending outwardly above the source-drain regions, wherein the gate wiring layer is connected to the gate electrode extensions extending outwardly above the source-drain regions by a plurality of contact holes (Figure 5's gate extension 151 does not extend outwardly above source-drain regions 12, for example).

The applicant failed to present arguments with respect to the maintained rejection of claim 32 under 35 USC 112, first paragraph.

The applicant's argument with respect to the maintained rejection of claims 37,

39 and 43 under 35 USC 112, first paragraph, is not persuasive. Specifically, claims 37, 39 and 43 do not recite that the gate electrode extensions are perpendicular to the longitudinal direction of the gate electrode (indeed, claims 37, 39 and 43 remain rejected under 35 USC 112, second paragraph, as well, because “a longitudinal direction” is unclear).

The applicant failed to present arguments with respect to the maintained rejection of claims 45 and 46 under 35 USC 112, first paragraph.

The applicant’s argument with respect to the maintained rejections of claims 25, 27, 28, 30, 31 and 37, at least insofar as those claims are understood, under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Mistry et al., falls with its wrong argument with respect to the maintained rejection of independent claim 25 under 35 USC 112, first paragraph. Again, the specification does not describe a gate electrode comprising an extension extending outwardly above the channel region, as recited in independent claim 25.

The applicant fails to substantively address the maintained rejections of claim 44, at least insofar as that claim is understood, under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Koyama et al. Specifically, the applicant fails to even acknowledge the “See Koyama et al’s Figure 2, for example, and note the source-drain wiring layers 3-5” heart of those rejections.

The applicant’s argument with respect to the maintained rejections of claims 26, 28, 30, 31 and 37, at least insofar as those claims are understood, under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Kerber et al. is wrong. Specifically, Kerber does, in fact, disclose a channel region including an outwardly extending extension. Again, see Kerber’s Fig. 1 and

note the two elements marked 1, which illustrate the channel region, including an outwardly extending extension.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office Action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP §706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. §1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Registered practitioners can telephone examiner Prenty at (703) 308-4939.

All other parties should telephone (703) 308-0956.

Mark Prenty
Mark V. Prenty
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